MULTIMEDIA UNIVERSITY STUDENT IDENTIFICATION NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 3, 2018/2019

BBF3124 – FINANCIAL DERIVATIVES

(All sections / Groups)

31 MAY 2019
9.00 a.m. – 11.00 a.m.
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This Question paper consists of 5 pages with 4 Questions and 1 Cumulative Normal Distribution Table only.

2. Attempt all **FOUR** questions. The distribution of the marks for each question is given.

3. Please write all your answers in the Answer Booklet provided.

QUESTION 1

a) Risks do involved when financial derivative products are used. Define specifically basis risk and state **THREE (3)** instances in hedging where basis risk would be present.

(6 marks)

b) "Since trading in derivatives is a zero sum game, society has no benefits from such trading." Is this statement true? Evaluate the above statement.

(5 marks)

c) Ms. Lea is a purchasing manager for a crude palm oil refinery and has placed an order for 1,500 metric tons of crude palm oil for delivery in Malacca on 10 December 2019. The delivery price for the sale will be the prevailing spot price on that day. She decided to hedge the company exposure using the palm oil contract traded on Bursa Malaysia Derivative Berhad. In setting her hedge, Ms. Lea wishes to be able to close out the future contracts on the delivery day and cover her exposure as much as possible.

The current spot price of crude palm oil is RM 1,300. The current futures prices are as follows:

Contract Month	September 2019	October 2019	November 2019	December 2019
Price (RM per metric ton)	1,305	1,308	1,312	1,315

i) Outline the strategy for Ms. Lea including number of contracts to be hedged?

(5 marks)

ii) What is the most appropriate month and price that Ms. Lea needs to execute her hedging strategy?

(2 marks)

iii) What is the total value that Ms. Lea needs to execute her hedging strategy?

(2 marks)

Continued...

d) Most of the investors will prefer options contracts over futures and forwards contracts. Explain the reasons which differentiate the contract itself. Also specify the different types of option contract available in the market.

(5 marks)

(Total 25 marks)

QUESTION 2

a) In mid-July 2019, TMA Berhad is expected to borrow RM 30,000,000 for the coming one year infrastructure upgrade.

Assume the following prices at mid-July 2019

Contract	August	September	October	November
Price	95.08	94.80	93.75	93.54

i) Outline how the company should initiate the strategy in order to have an expected net income. Indicate the proposed strategy for the coming months by including the number of KLIBOR contracts required.

(6 marks)

ii) Describe the assumption on which this strategy is based.

(2 marks)

iii) From the above pricing, indicate that the expected trend of interest rate in the coming months.

(2 marks)

Continued...

b) In May 2019, you have requested your broker for the available spot rate. Below is the rates that you gotten:

August 2019 KLIBOR = 6.5%
February 2020 KLIBOR = 7.8 %

i) Assuming the August 2019 KLIBOR futures contract is being priced at 92. Calculate the right price for the futures contract.

(7 marks)

ii) Outline the strategy that needs to be adopted based on the above pricing in order to earn the riskless profit. State whether the futures contract is over-priced or under-priced and why.

(3 marks)

c) Briefly explain "cash and carry" and give **ONE (1)** example for this strategy.

(5 marks)

(Total 25 marks)

QUESTION 3

a) You have decided to long MCA Berhad stock at a price of RM20.00. You believe this stock has a long term potential but you hear that the stock is likely to undergo serious instability over the next two to three months due to demand and supply. You intend to keep the stock over the longer term and want to profit from long term capital appreciation and not from short term volatility. Suppose, 3-month at-the-money put options on MCA Berhad stock is being quoted at RM0.18 and a 3-month at-the-money call options on the same stock is being quoted at RM0.15. Assumed that the no of share for one contract

i) Outline the appropriate strategy and justify your answer.

(4 marks)

ii) Provide your answers with a payoff table and a payoff diagram indicating the net profit or loss for the recommended strategy. Construct the payoff table from RM 15 to RM 25 with the interval of RM 1.

(21 marks)

(Total 25 marks)

Continued...

QUESTION 4

a) FGV Bhd stock price is RM10.00, premium on its RM9.00 calls and put are quoted at RM0.77 and RM0.52, respectively. Both options have maturity of 90 days and the current risk free rate is 5%. Based on put-call parity equation, is there a mispricing?

(5 marks)

b) Sammy, as the professional analyst is looking for the correct value for put option using Black Scholes Option Pricing Model. She is interested in Glomac Berhad put option. Glomac Berhad is currently trading at RM 8.00 per share and the exercise price for the 3-month puts is RM 7.00. The risk free rate is quoted at 3.8% per annum while the stock volatility is 0.4. Compute the put value.

(20 marks)

(Total 25 marks)

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Table: Cumulative Normal Distribution

d	$N(d)$	d	$N(d)$	d	$N(d)$	d	$N(d)$	d	$N(d)$	d	$N(d)$
−3.00	.0013	−1.58	.0571	−0.76	.2236	0.06	.5239	0.86	.8051	1.66	.9515
−2.95	.0016	−1.56	.0594	−0.74	.2297	0.08	.5319	0.88	.8106	1.68	.9535
−2.90	.0019	−1.54	.0618	−0.72	.2358	0.10	.5398	0.90	.8159	1.70	.9554
−2.85	.0022	−1.52	.0643	−0.70	.2420	0.12	.5478	0.92	.8212	1.72	.9573
−2.80	.0026	−1.50	.0668	−0.68	.2483	0.14	.5557	0.94	.8264	1.74	.9591
−2.75	.0030	−1.48	.0694	−0.66	.2546	0.16	.5636	0.96	.8315	1.76	.9608
−2.70	.0035	−1.46	.0721	−0.64	.2611	0.18	.5714	0.98	.8365	1.78	.9625
−2.65	.0040	−1.44	.0749	−0.62	.2676	0.20	.5793	1.00	.8414	1.80	.9641
−2.60	.0047	−1.42	.0778	−0.60	.2743	0.22	.5871	1.02	.8461	1.82	.9656
−2.55	.0054	−1.40	.0808	−0.58	.2810	0.24	.5948	1.04	.8508	1.84	.9671
−2.50	.0062	−1.38	.0838	−0.56	.2877	0.26	.6026	1.06	.8554	1.86	.9686
−2.45	.0071	−1.36	.0869	−0.54	.2946	0.28	.6103	1.08	.8599	1.88	.9699
−2.40	.0082	−1.34	.0901	−0.52	.3015	0.30	.6179	1.10	.8643	1.90	.9713
−2.35	.0094	−1.32	.0934	−0.50	.3085	0.32	.6255	1.12	.8686	1.92	.9726
−2.30	.0107	−1.30	.0968	−0.48	.3156	0.34	.6331	1.14	.8729	1.94	.9738
−2.25	.0122	−1.28	.1003	−0.46	.3228	0.36	.6406	1.16	.8770	1.96	.9750
−2.20	.0139	−1.26	.1038	−0.44	.3300	0.38	.6480	1.18	.8810	1.98	.9761
−2.15	.0158	−1.24	.1075	−0.42	.3373	0.40	.6554	1.20	.8849	2.00	.9772
−2.10	.0179	−1.22	.1112	−0.40	.3446	0.42	.6628	1.22	.8888	2.05	.9798
−2.05	.0202	−1.20	.1151	−0.38	.3520	0.44	.6700	1.24	.8925	2.10	.9821
−2.00	.0228	−1.18	.1190	−0.36	.3594	0.46	.6773	1.26	.8962	2.15	.9842
−1.98	.0239	−1.16	.1230	−0.34	.3669	0.48	.6844	1.28	.8997	2.20	.9861
−1.96	.0250	−1.14	.1271	−0.32	.3745	0.50	.6915	1.30	.9032	2.25	.9878
−1.94	.0262	−1.12	.1314	−0.30	.3821	0.52	.6985	1.32	.9066	2.30	.9893
−1.92	.0274	−1.10	.1357	−0.28	.3897	0.54	.7054	1.34	.9099	2.35	.9906
−1.90	.0287	−1.08	.1401	−0.26	.3974	0.56	.7123	1.36	.9131	2.40	.9918
−1.88	.0301	−1.06	.1446	−0.24	.4052	0.58	.7191	1.38	.9162	2.45	.9929
−1.86	.0314	−1.04	.1492	−0.22	.4129	0.60	.7258	1.40	.9192	2.50	.9938
−1.84	.0329	−1.02	.1539	−0.20	.4207	0.62	.7324	1.42	.9222	2.55	.9946
−1.82	.0344	−1.00	.1587	−0.18	.4286	0.64	.7389	1.44	.9251	2.60	.9953
−1.80	.0359	−0.98	.1635	−0.16	.4365	0.66	.7454	1.46	.9279	2.65	.9960
−1.78	.0375	−0.96	.1685	−0.14	.4443	0.68	.7518	1.48	.9306	2.70	.9965
−1.76	.0392	−0.94	.1736	−0.12	.4523	0.70	.7580	1.50	.9332	2.75	.9970
−1.74	.0409	−0.92	.1788	−0.10	.4602	0.72	.7642	1.52	.9357	2.80	.9974
−1.72	.0427	−0.90	.1841	−0.08	.4681	0.74	.7704	1.54	.9382	2.85	.9978
−1.70	.0446	−0.88	.1894	−0.06	.4761	0.76	.7764	1.56	.9406	2.90	.9981
−1.68	.0465	−0.86	.1949	−0.04	.4841	0.78	.7823	1.58	.9429	2.95	.9984
−1.66	.0485	−0.84	.2005	−0.02	.4920	0.80	.7882	1.60	.9452	3.00	.9986
−1.64	.0505	−0.82	.2061	0.00	.5000	0.82	.7939	1.62	.9474	3.05	.9989
−1.62	.0526	−0.80	.2119	0.02	.5080	0.84	.7996	1.64	.9495		
−1.60	.0548	−0.78	.2177	0.04	.5160						

This table shows the probability $[N(d)]$ of observing a value less than or equal to d. For example, as illustrated, if d is −.24, then $N(d)$ is .4052.

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